

What is claimed is:

1. A mini-environment pod device for a micro-device manufacturing apparatus, said device comprising:
a cassette being able to hold a plurality of wafers;
a pod providing an inner space to store the cassette,
wherein said pod includes an electromagnetic shield for shielding the pod; and
a lid which fits into an opening of said pod, the lid providing an isolated environment in the inner space.
2. A device according to Claim 1, wherein said mini-environment pod is a front opening type having the opening in the front of the pod.
3. A device according to Claim 1, wherein said mini-environment pod is a bottom opening type having the opening in the bottom of the pod.
4. A device according to Claim 1, further comprising a conductive element, provided on a surface which contacts the manufacturing apparatus when said mini-environment pod is installed on the apparatus, for being in a conductive relationship with said electromagnetic shield when said mini-environment pod is installed.
5. A device according to Claim 1, wherein said electromagnetic shield comprises wire mesh provided on or within walls of said pod.
6. A device according to Claim 1, wherein said electromagnetic shield comprises metal coatings provided on walls of said pod.

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7. A device according to Claim 1, wherein said electromagnetic shield comprises shielding materials provided in walls of said pod.

8. A device according to Claim 1, wherein said electromagnetic shield has a shielding capacity of under 100 dB (μ V) within frequencies of about 9 kHz to about 400 MHz.

9. A micro-device manufacturing apparatus for processing substrates, said apparatus comprising:

a shielded chamber having an opening covered with a door;

5 a mini-environment pod, having an open end, containing a cassette for holding a plurality of wafers and including a lid covering the open end, said pod being installed over the opening of said chamber, wherein said mini-environment pod has an electromagnetic shield, and
10 when said pod is installed on said chamber, said electromagnetic shield is in a conductive relationship with said shielded chamber;

a door opener which opens the door of said chamber and the lid of said pod when said mini-environment pod is
15 installed on said chamber; and

a processing system, contained in said chamber, which processes a wafer in said chamber.

10. An apparatus according to Claim 9, wherein said chamber has a grounded conductive portion around the opening, which contacts said pod when said pod is installed on said chamber.

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11. An apparatus according to Claim 9, further comprising an optical system in said chamber for exposing the wafer with radiation.
12. An apparatus according to Claim 9, further comprising kinematic couplings which mount the mini-environment pod on said manufacturing apparatus.
13. An apparatus according to Claim 9, wherein said mini-environment pod is a front opening type having the opening in the front of the pod.
14. An apparatus according to Claim 9, wherein said mini-environment pod is a bottom opening type having the opening in the bottom of the pod.
15. An apparatus according to Claim 9, wherein said electromagnetic shield comprises wire mesh provided on or within walls of said pod.
16. An apparatus according to Claim 9, wherein said electromagnetic shield comprises metal coatings provided on walls of said pod.
17. An apparatus according to Claim 9, wherein said electromagnetic shield comprises shielding materials provided in walls of said pod.
18. An apparatus according to Claim 9, wherein said electromagnetic shield has a shielding capacity of under 100 dB (μ V) within frequencies of about 9 kHz to about 400 MHz.

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19. A semiconductor manufacturing method, comprising:
providing a mini-environment pod device, which
comprises (i) a cassette being able to hold a plurality of
wafers, (ii) a pod providing an inner space to store the
cassette, wherein the pod has an electromagnetic shield,
and (iii) a lid which fits into an opening of the pod, the
lid providing an isolated environment in the inner space;

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providing a micro-device manufacturing apparatus,
which comprises (i) a shielded chamber having an opening
covered with a door, (ii) a door opener which opens the
door of the chamber and the lid of the pod when the pod is
installed on the apparatus and (iii) a processing system
which processes the wafer in the chamber, wherein the
electromagnetic shield of the pod is in a conductive
relationship with the chamber when the pod is installed on
the chamber;

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installing the mini-environment pod onto the
manufacturing apparatus;

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opening both the door of the chamber and the lid of
the pod to expose the wafer to the inside atmosphere of
the chamber;

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picking up one of the wafers from the cassette and
carrying the wafer to the processing system; and
processing the wafer with the processing system.

20. A method according to Claim 19, wherein said
processing step comprises exposing the wafer to radiation
using a projection optical system.

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